

## Message from the President



Steve Sparks, President

### New IAVCEI Awards

IAVCEI has been reviewing its Awards. The decisions of this review are given in a separate statement but this article gives a bit more background into the changes and the new Awards.

IAVCEI is extremely pleased to announce formally the Krafft Medal, which has come about as a consequence of the generosity of the Krafft family through the trust fund "Volcans et Images". The encouragement and help of Bertrand Krafft and Jean Louis Cheminee, acting on behalf of the trust, are particularly appreciated. The sponsorship allows IAVCEI to cast the medal and to assist medal winners attend the ceremony at the General Assembly. An illustration of the design of the new medal is given in this newsletter. The Krafft Medal is given to an individual who has made outstanding contributions to volcanology through service to the scientific community or to communities threatened by volcanic activity. The Krafft Medal honors those who have shown altruism and dedication to the humanitarian and applied sides of volcanology. A representative of "Volcans et Images" will join the Awards Committee in considering nominations. The Krafft Medal will be given for the first time at the IAVCEI General Assembly in 2004 and the Awards Committee will seek nominations during 2003.

For the two other medals the rules and procedures for the Thorarinsson Medal are unchanged, but the rules for the Wager medal have been changed. The principle change is that the award will now be given every two years to one individual. The rules for the Wager Medal have had quite a complex history, and some updating and simplification of the rules was thought necessary. The original rules, which were published in Bulletin

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## Volcanology in South America

Within the few last years a number of volcanological, volcano hazards mapping, and monitoring studies have been completed or are in development in South America. Many research groups have advanced in their consolidation in most Andean countries, in some cases through collaboration with foreign individuals or educational and research institutions. In addition, workshops, seminars, and permanent courses on volcanology have been established. The beginning of the 21<sup>st</sup> Century has thus started with a promising outlook for volcanology in South America.

Despite great strides in developing volcanology in South America, several problems remain and prove difficult to resolve. In the whole region, the small groups of scientists and small budgets for science (with some exceptions) are common problems. In addition, South American volcanology is impeded by a great deal of information residing in unpublished reports, maps, and theses, and inadequate international contact within the region and lack of travel outside.

The 2002 IAVCEI General Assembly in Chile should benefit and promote participation of many scientists in volcanology in South America. Having a large number of volcanologists from all over the world in Chile, together with magnificent field trips to wonderful volcanic areas in Chile, Argentina, and Ecuador, will undoubtedly contribute remarkably to the development of volcanology in South America. Another possibility to enrich South American volcanology is to have inexpensive volcanology courses and conferences prior to the General Assembly, with economic support for participants.

Here, we present a brief summary of the 'state of the art' on Andean volcanology throughout the region.

### Columbia

Colombia has established three Volcano Observatories, belonging to INGEOMINAS, which monitor 9 hazardous volcanoes: Nevado del Ruiz, Nevado de Santa Isabel, Cerro Maichín, Cerro Bravo, Galeras, Cumbal, Nevado del Huila, Sotará, and Purace. Each observatory has the capability of deploying permanent seismic stations, tilt meters, precise leveling, GPS, EDM, and gas studies, including SO<sub>2</sub> (COSPEC). In the near future, plans are to begin monitoring Chiles, Cerro Negro, Azufral, Doña Juana, and Nevado del Tolima. Hazard maps for Nevado del Ruiz, Galeras, Machín, Azufral, Chiles, Cerro Negro, Nevado del Huila, and Doña Juana are now available. More information can be found on the internet at <http://trilobite.ingeomin.gov.co/observatorios.html>.

### Ecuador

The mainland of Ecuador has 31 volcanic centers identified as potentially active, putting around 4 million people at risk. In the Galapagos, about 10 fit this category. Presently, 12 published hazards maps exist for 11 of those volcanoes, with several more underway. The Instituto Geofísico (IG) (founded in 1983) of the Escuela Politécnica Nacional in Quito is the only scientific

*continued on page 2...*

Volcanique in 1973, were quite involved and included consultation with the IAVCEI national sub-Committee of the UK, a body which no longer exists. The rules were changed in 1991 and 1995, after consultation with Mrs Wager, but formal written records of these changes are not complete. The Medal has been awarded every four years and commonly has been awarded to two individuals, although the original rules only stipulate award to one person. The complexity of the rules and incompletely documented rule changes indicated that the time had come to review and simplify the rules. One aspect of arrangements is that there will almost certainly be scientists who are disadvantaged by giving the medal every four years to two people. The Medal is aimed at those in mid-career and the age restriction means that some people with unfortunate birth dates will be significantly less experienced than others at the time of nomination. The next Wager Medal will be awarded at the 2004 General Assembly in Chile under the new rules.

There are many people who have given outstanding service to IAVCEI over the years. Many other organisations give Honorary memberships or fellowships to a selected number of people and so IAVCEI has decided to elect three honorary members of IAVCEI at every General Assembly. The first three Honorary Members will be announced at a ceremony at IUGG General Assembly at Sapporo, Japan in July 2003. Three further Members will be announced at the General Assembly in Chile in 2004. From 2004 three Honorary Members will be elected every four years. The Executive Committee will decide on suitable recipients. There will be no formal call for nominations, but members will of IAVCEI are encouraged to suggest names to the Committee through a letter to the Secretary General.

Over the last two years an issue has arisen about the recognition of outstanding young scientists. The Wager Medal focuses on experienced mid-career scientists and IAVCEI currently has no mechanism of recognising and encouraging young scientists at the beginning of their careers. Rather than create another medal and be open to criticism of devaluing IAVCEI medals by proliferation, a Young Scientist Lecture is to be initiated. The Lecture would be a prestigious event at IAVCEI Meetings and the recipient may be asked to repeat the Lecture in his or her home country. The detailed rules for selecting young lecturers are still being discussed. Consideration is being made to honour a great volcanologist and IAVCEI will also seek sponsorship, which might influence the choice of Lecture name. At this stage the Executive Committee have only approved the principle of having a biannual Lecture to honor and encourage a young scientist. Members are welcome to let the Committee know of any ideas in relation to how this initiative might develop. It is hoped that this can develop sufficiently fast that the first IAVCEI Young Scientist lecture can take place in Chile in 2004.

The Committee are aware of the dangers of proliferating Awards and thereby devaluing them. However, in comparison to other scientific organisations IAVCEI has had very few awards. All the new awards, in various ways, honor colleagues for achievements that are quite different to those recognised by the Thorarinsson and Wager Medals. In many countries awards can have a tremendously positive impact on people's careers and prestige. The executive believe that these developments will broaden the range of people and kinds of achievements recognised by IAVCEI and will contribute to the promotion of IAVCEI science.

- R.S.J. Sparks, President

group in Ecuador dedicated to real-time instrumental tectonic and volcanic monitoring of Ecuador's mainland and offshore volcanoes, and to the ongoing study of the Ecuadorian volcanic terrain. The IG operates a 65-station telemetered seismic network throughout the country and currently monitors 11 volcanoes, including Cotopaxi and the currently active Tungurahua and Guagua Pichincha. Besides being monitored with 1 Hz vertical seismic sensors to broadband arrays, the volcanoes are also monitored for deformation changes with telemetered electronic tiltmeters, EDM arrays, interferometry and close visual observations. Fumarole and hot spring monitoring and COSPEC measurements for SO<sub>2</sub> concentrations are carried out frequently. The IG also maintains collaborative programs with many individuals of foreign governments and educational institutions, most importantly with the VDAP team of the US Geological Survey (USGS), the IRD group (France), IRIS/USGS, The University of Oregon, The University of New Mexico-Albuquerque, BGR (Germany), INGEOMINAS (Colombia), the University of Michigan, and INDRA-ESPACIO.

#### *Perú*

Perú has a chain of active volcanoes in the southern part of the country that belong to the Central Andes. The Instituto Geofísico del Perú and the IRD group (France) have a collaborative program to study the related volcanic hazards and to begin monitoring activities at Misti, Sabancaya, and Huayna Putina volcanoes.

#### *Argentina*

Argentina has both a chain of active Andean volcanoes along its border with Chile and thousands of intraplate volcanoes. Although most active volcanoes are on the Chilean side, some volcanoes like Lascar, Planchón-Peteroa and Copahue have been studied through collaborative projects. A hazard map of Planchón-Peteroa was a final product of one project. Seismic monitoring stations were deployed in Copahue and Planchón-Peteroa, but because of bad accessibility and/or weather conditions, seismic monitoring has so far been sporadic. In collaboration with CSIC (Spain) and Universidad de Cádiz, an Antarctic Volcano Observatory is currently in operation on Deception Island. Seismic monitoring, together with other geophysical methods and geodesy, are being developed. One of the nine worldwide VOLCANIC ASH ADVISORS CENTERS (VAACs), created by the International Civil Aviation Organization (ICAO) to minimize the effects of volcanic eruptions on air navigation, is located in Buenos Aires, and its area extends between 10° - 90° S and 30° - 90° W.

A training course in volcanology (IXth version 2002) has been established by Instituto Geonorte (Salta Province) and sponsored by UNESCO. The 'Central Andes International Volcanological Course' is developed in Northwestern Argentina and is oriented toward geoscientists working in any volcanological discipline as well as for those prospecting for minerals in volcanic areas. It is a field training course, dealing with both theoretical concepts and field interpretations of deposits and volcanic structures found in the Central Andes. The course includes a field trip across the Andes, visiting the largest Central Andes calderas, including Cerro Galán, Aguas Calientes, Pasto Ventura, Cerro Blanco, and their associated pyroclastic flows, in addition to shoshonitic volcanism, volcanic domes, and acid calcalkaline volcanism. A short training course organized by the Comisión Nacional de Asuntos Espaciales (CONAE), Instituto GEONORTE and UNESCO is scheduled for March, 2002, in Córdoba City, focusing on volcanic plumes and satellite monitoring.

Other activities that are having a strong impact on volcanology in Argentina are touristic and educational activities at volcanic centers, in particular in the Payún Matru - Llacanelo Basaltic Fields, Malargue, Mendoza Province. That area covers 15,900 km<sup>2</sup>, and includes the Payún Matru caldera (8 km wide) and more than 800 monogenetic pyroclastic cones and domes.

## Chile

Chile has three Andean volcanic zones from the northern Central Andes (18°-27° S), Southern Andes (33°-46° S), and Austral Andes (49°-56° S). The most active volcanoes are located in the Southern Andes, where most of the big cities are located (about 10 million inhabitants), including most industries, agriculture, forestry, and hydroelectric power plants. In fact, the largest eruptions in the 20<sup>th</sup> Century along the whole Andean Range, occurred in this section: Quizapu (1932) and Hudson (1991). SERNAGEOMIN is the state institution responsible of the monitoring and volcano hazard mapping. Since 1996, SERNAGEOMIN has operated the Observatorio Volcanológico de los Andes del Sur (OVDAS) in Temuco City, in front of two very active volcanoes: Llaima and Villarrica. Permanent monitoring with 11 seismic stations occurs at Callaqui, Lonquimay, Llaima, Villarrica, Osorno, and Calbuco volcanoes. This year Quizapu volcano, Carrán volcanic group (70 pyroclastic cones and maars), and Mocho-Choshuenco volcanoes will also have seismic stations installed, with the data sent to and processed by OVDAS. The USGS, CSIC (Spain), HIGP/SOEST (University of Hawaii), and the University of Washington, among others, have provided support and collaborative programs. Since 1997, hazard maps have been published for Planchón-Peteroa, Callaqui, Copahue, Tolguaca, Lonquimay (in collaboration with SEGEMAR (Argentina) and the BGS), Villarrica, Osorno, and Calbuco. During this year and in 2003, hazard maps will be completed for Llaima and Mocho-Choshuenco volcanoes. Geologic maps, physical volcanology, and geochemistry studies have been carried out at almost all Southern Andes volcanoes, in collaboration with the Universidad de Chile, Universidad de Concepción, and foreign individuals from a number of institutions, including Florida University, University of Bristol, Geneva University, USGS, IRD (France), and the University of Wisconsin-Madison.

- Hugo Moreno

## IAVCEI Awards

### Overview

The Executive Committee has carried out a review of IAVCEI awards. Some changes have been made to the procedures. A new Krafft Medal has been sponsored from the generosity of the Krafft family. Thus IAVCEI now awards three medals. A scheme of Honorary Memberships has been instituted. A Young Scientist Lecture is to be introduced to encourage IAVCEI scientists at the beginning of their careers.

### Procedures

The Awards Committee is chaired by the President and consists of a panel of three scientists of standing and any additional members required by the rules of a Medal. The members of the Committee are recommended by the President and are formally approved by the Bureau. The Awards Committee is appointed for a term of four years under the chair of the President and this Committee considers nominations for all medals. The decisions on award winners are the responsibility of the Awards Committee. Honorary Members are elected by the Executive Committee. The following rules have been agreed and supersede all previous rules. Previous Medalists are listed at the end of this article.

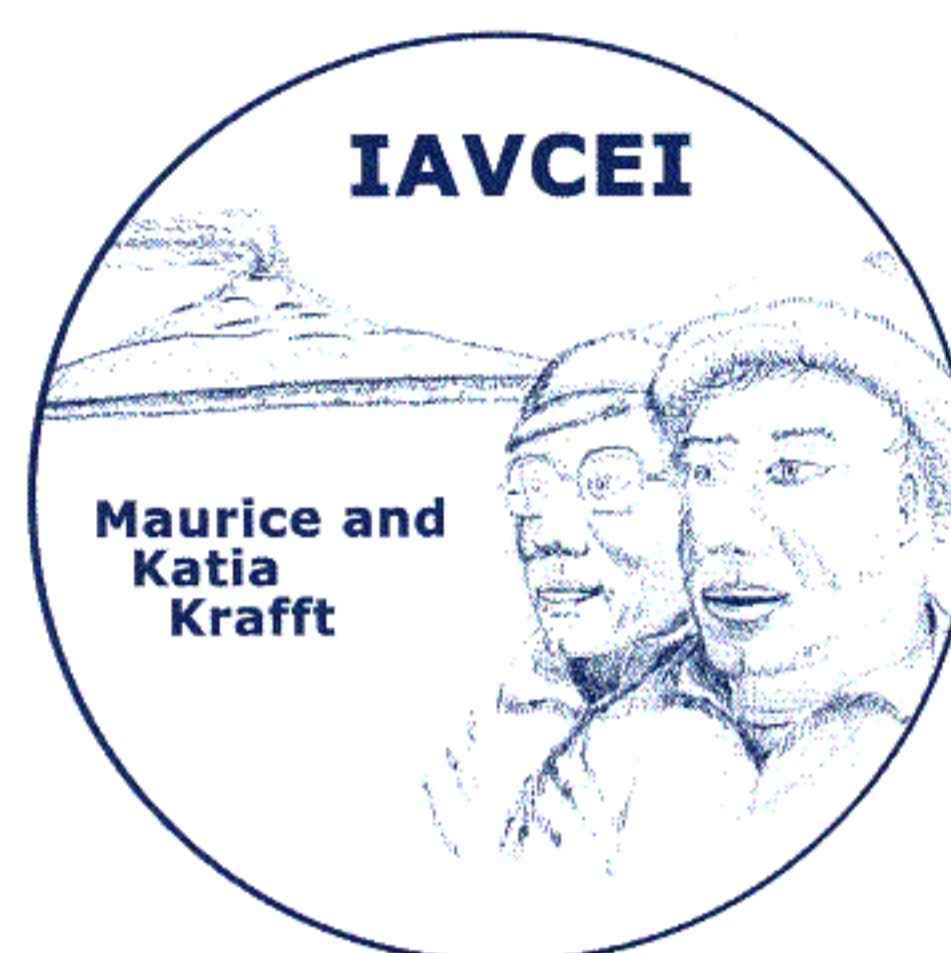
### Thorarinsson Medal

The Thorarinsson medal is the most senior medal of IAVCEI and is given every four years at the IAVCEI General Assembly. The medal was generously supported by a donation from the Iceland Geoscience Society in honor of Professor Sigurdur Thorarinsson. The medal is given for outstanding and fundamental contributions to research in volcanology. Recipients will be scientists of outstanding distinction. The President of the Icelandic Geoscience Society or a delegated representative will join the Awards Committee in considering nominations.

### Wager Medal

The Wager medal was donated by the family of Professor L R Wager. The Wager Medal is given to a scientist under the age of 40 on 31st December in the year preceding the year when the Award is made. The Award is given every two years to a single individual who has made outstanding contributions to the study of volcanic rocks

### The Krafft Medal



The Krafft Medal will be awarded every four years at the IAVCEI General Assembly. The first Award will be given at the General Assembly in Chile in 2004. The Award has been generously sponsored by the family of Maurice and Katia Krafft through the trust fund "Volcans et Images". The Krafft

Medal is given to an individual who has made outstanding contributions to volcanology through service to the scientific community or to communities threatened by volcanic activity. The Krafft Medal honors those who have shown altruism and dedication to the humanitarian and applied sides of volcanology. A representative of "Volcans et Images" will join the Awards Committee in considering nominations.

### Honorary Members

The Executive Committee will elect three honorary members of IAVCEI at every General Assembly. The first three Honorary Members will be announced at a ceremony at IUGG General Assembly at Sapporo, Japan in July 2003. Three further Members will be announced at the General Assembly in Chile in 2004. From 2004 three Honorary Members will be elected every four years. Honorary Membership is given to those individuals who have made outstanding contributions to the volcanological community, and in particular to IAVCEI. There will be no formal call for nominations, but members of IAVCEI are encouraged to suggest names to the Committee through a letter to the Secretary General.

### Nomination Procedure

All the Medals of IAVCEI will involve the same nomination procedure as follows.

"A call for nominations will be made in the community, normally at least a year before the Award is announced. The Award package will include a nominating letter stating the case for giving the Award to the particular individual, a curriculum vitae including a list of publications, and a minimum of three

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## IAVCEI Scientific Program for IUGG 2003 Meeting - Sapporo, Japan

### *U02: Volatiles in Island Arcs: From Slab to Stratosphere* UNION

Volatiles play a crucial role in subduction zones in causing magma generation in the mantle and volcanism. The input of volatiles into the atmosphere can have environmental and climatic impacts. This Union Symposia synthesizes what is known about the subduction with particular emphasis on volatiles and the cycling of volatiles through the subduction system. The Symposium will consider the basic subduction process, release of volatiles from the subducting plate and involvement in generating magmas, their fluxes from the mantle through magmatic systems and into the atmosphere, and the environmental impacts of these volcanic gases.

Convener: Steve Sparks, Dept. of Earth Sciences, Wills Memorial Bldg., Bristol University, Bristol Bs8 1RJ, U.K.; Phone: +44 1179 545419; Fax: +44 1179 253385; email: [glrsjs@epo.bris.ac.uk](mailto:glrsjs@epo.bris.ac.uk)

Co-Convener: Yoshiyuki Tatsumi, Japan Marine Science and Technology Center, Japan

### *JSV02: Volcanism and the Earth's Atmosphere* IAVCEI, IAMAS

Volcanic eruptions can have a profound effect on the Earth's atmosphere and environment on all time scales. This session invites papers on all aspects of the relationship of volcanic eruptions and the atmosphere, including model and observational studies of the winter warming effect on Northern Hemisphere continents, effects on ozone depletion, the potential for supervolcanoes to completely disrupt civilization, threats to aviation, effects on long-term climate change and implications for detecting and attribution global warming to anthropogenic forcing, radiative and dynamical responses, eruption mechanisms, prediction of eruptions, hydrological and geochemical studies, plumes, remote sensing, and stratospheric transport of aerosols.

Convener: Alan Robock, Department of Environmental Sciences, Rutgers University, 14 College Farm Road, New Brunswick, NJ 08901-8551, USA; Phone: +1-732-932-9478; Fax: +1-732-932-8644; email: [roboc@envsci.rutgers.edu](mailto:roboc@envsci.rutgers.edu)

Co-Convener: Stephen Self, Department of Earth Sciences, The Open University, UK

### *JSV03: Flood Basalt Volcanism* IAVCEI, IASPEI

Significance of felsic volcanism in Large Igneous Provinces (LIPs) or flood-basalt provinces: Felsic volcanics form a significant proportion of some LIPs. If erupted very explosively they may have greater biospheric impact than basaltic magmas. Volcanic rifted margins (VRMs): Relationships between a VRM's three defining components: \*LIPs of thick mafic/felsic volcanic sequences, \*High-Velocity Lower Crust at the continent-ocean

boundary, and \*Seaward-Dipping Reflectors marking new ocean crust formation. Flood basalts as windows into mantle dynamics: Highly magnesian magmas are mantle probes. Mantle tomography shows low-velocity zones (LVZs) at the core-mantle boundary, but their continuity with upper-mantle LVZs beneath active LIPs is ambiguous.

Convener: Martin Menzies, (Chairman/Head of Department & Professor of Geochemistry), Department of Geology Royal Holloway, University of London, Egham, Surrey TW20 OEX, England; Phone: 01784-443581; Fax: 01784-471780; mobile phone: 07748-012993; email: [menzies@gl.rhul.ac.uk](mailto:menzies@gl.rhul.ac.uk)

Co-Conveners: Steve Holbrook, University of Wyoming, USA  
Ian Campbell, Australian National University, Australia  
Simon Klemperer, Stanford University, USA  
Steve Self, The Open University, UK

### *JSV04: Recent Advances in Quantitative Volcano Seismology* IAVCEI, IASPEI

This symposium will focus on: (1) high-resolution tomography to image subsurface volcanic structures; (2) high-resolution locations of volcano-tectonic (VT) earthquakes to map magma transport pathways; (3) waveform analyses of very-long-period (VLP) signals, long-period (LP) events, and tremor to quantify magma and hydrothermal transport dynamics; (4) theoretical models of the generation mechanisms of volcano seismic signals; (5) laboratory studies of the dynamics and acoustic properties of volcanic fluids; and (6) geodetic studies using tiltmeters, strainmeters, GPS, and INSAR aimed at quantifying volcanic processes within the larger geodynamic framework of regional structural features and stress fields.

Convener: Bernard Chouet, Volcano Hazards Team, U.S. Geological Survey, 345 Middlefield Road, MS 910, Menlo Park, CA 94025, U.S.A.;  
Phone: +1-650-329-4796; Fax: +1-650-329-5203; email: [chouet@usgs.gov](mailto:chouet@usgs.gov)

Co-Convener: Hiroyuki Kumagai, National Research Institute for Earth Science and Disaster Prevention, Japan

### *V05: Volcanic Flows: Observation, Experiment, and Theory* IAVCEI

This symposium will focus on eruptive flowage phenomena and products including lavas, lava domes, pyroclastic flows, lahars, and debris flows. Particular emphasis will be placed on transitions between these phenomena and between effusive and explosive eruptions. The availability of four sessions should allow a comprehensive examination of the subject matter including observation, experiment, and modelling.

Convener: Thomas P. Miller, U.S. Geological Survey, 4200 University Drive, Anchorage, AK 99508, USA; Phone: 907-786-7454; fax: 907-786-7425; email: [tmiller@usgs.gov](mailto:tmiller@usgs.gov)  
Co-Conveners: Takehiro Koyaguchi, Grad. School of Frontier Sciences, Univ. of Tokyo, Japan  
Augusto Neri, Dip.to di Scienze della Terra, Pisa, Italy

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**V06: Origins of Arc Magmas**

IAVCEI

Contributions will explore physical and chemical constraints on the generation of magmas at subduction zones. The relative roles of lithosphere, wedge and slab in providing chemical elements and in controlling petrogenesis will be examined, including; 1) nature of the slab-derived component- fluid vs. melt, sediment vs. basalt? 2) melting process in the wedge - high or low degrees? wet or dry? 3) nature of melt transport- rapid fracture-aided migration or slower percolative flow? 4) timescales of transport and storage - fast supply to surface or stagnation and ponding at depth? and 5) architecture of magma storage systems - sizable chambers or transient pulses?

Convener: Jon Davidson, Dept of Geological Sciences, University of Durham, South Road, Durham, DH1 3LE, UK; Phone: (0)191 3742528;

Fax: (0)191 374 2510; email: [J.P.Davidson@durham.ac.uk](mailto:J.P.Davidson@durham.ac.uk)

Co-Conveners: Richard Arculus, Australian National University, Australia Yoshiyuki Tatsumi, Japan Marine Science and Technology Center, Japan

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**V07: Subaqueous Volcanism, Volcanogenic Sedimentation and Hydrothermal systems**

IAVCEI

Rising magma bodies that encounter meteoric water or seawater undergo changes in eruption style and depositional regime, and magmato-hydrothermal systems may originate. We invite contributions that deal with the results of water-magma interaction in both the marine and terrestrial realms. Marine research topics include studies of heat loss, ocean floor alteration, case histories of spouter fields, and submarine eruptions with their deposits. Terrestrial research topics include theoretical and field studies of the geochemistry of hydrothermal fluids, relations between ore deposits and shallow magma bodies, the geochemistry of volcanic lakes, and the impact of volcanic fluids on surface water quality.

Convener: Johan C. Varekamp, George I. Seney Professor of Geology, Earth & Environmental Sciences, 265 Church street, Wesleyan University, Middletown CT 06459-0139 USA; Phone: 1 (860) 685 2248;

Fax: 1 (860) 685 3651; e-mail: [jvarekamp@wesleyan.edu](mailto:jvarekamp@wesleyan.edu)

Co-Conveners: Wulf Mueller, Universite du Quebec a Chicoutimi, Canada Kazuhiko Kano, Institute of Geoscience, Geological Survey of Japan, Japan

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**V08: Caldera Formation and Unrest**

IAVCEI

Caldera-forming eruptions generate large-volume pyroclastic flows and airborne plumes of ash and aerosols that can cause environmental impacts on a global scale. They culminate long histories of magma generation, ascent, and storage. Recent studies have highlighted gaps in our understanding of the magma plumbing systems beneath calderas and the factors that trigger

caldera-forming eruptions. Particularly important are the precursors to such eruptions and associated geophysical and geochemical signals. This session invites contributions on the space-time development of caldera systems, including case histories of modern caldera unrest, reconstructions of ancient caldera evolution, and modeling of the generation and eruption of large crustal magma bodies.

Convener: Tim Druitt, Laboratoire Magmas et Volcans (CNRS), Université Blaise Pascal, 5 Rue Kessler, 63038 Clermont-Ferrand, France; Phone: (33) 4 7334 6718; email: [T.Druitt@opgc.univ-bpclermont.fr](mailto:T.Druitt@opgc.univ-bpclermont.fr)

Co-Convener: Peter Lipman, U.S. Geological Survey, USA  
Tad Ui, Hokkaido University, Japan

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**V09: Reassessing the Volcanic Plutonic Link**

IAVCEI

This session will address the "volcanic-plutonic interface" in the continental and oceanic crust. We seek papers that address the following: Why do some silicic magmas, generated at similar depths in the lower crust, intrude as plutons while others erupt at the surface to form flood rhyolites? What is the precise genetic and temporal relationship, between calderas and underlying plutons? What information about volcanic plumbing systems can be gained from phenocryst populations in lavas? Are silicic magma chambers akin to MOR-type mushy zones? Does the proposed power-law relationship for measured granitic pluton dimensions mean that the "10:1 ratio" of intrusive to extrusive magma volumes is a severe overestimate?

Convener: Nick Petford, Centre for Earth and Environmental Science Research, Kingston University, Kingston Upon Thames, Surrey KT1 2EE, UK; Phone: +44 020 8547 7518; Fax: +44 020 8547 7497; email: [N.Pet@kingston.ac.uk](mailto:N.Pet@kingston.ac.uk)

Co-Conveners: Bernard Bonin, Paris-Sud, France  
Dougal Jerram, University of Durham, UK

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**V10: Volcano Structure and Scientific Drilling**

IAVCEI

The significant solubility of water in melt at pressures of 10-300 bars suggests that the volcanic edifice itself may control the behavior of magma erupting through it. Andesitic volcanism is characteristically pulsatory, hence conditions within the edifice will be time dependent. With each eruptive cycle, a conduit must be established anew. Do precursory phenomena reflect establishment of a conduit? What are the physical and chemical conditions around an active conduit and how do they evolve with time? Where does the gas go? What is the nature of induced hydrothermal circulation? This symposium will explore field and theoretical aspects of volcano structure and emphasize new data from direct drilling observation of active volcanic systems.

Convener: John Eichelberger, Alaska Volcano Observatory, UAF Geophysical Institute, P.O. Box 757320, Fairbanks, AK 99775-7320, USA; Phone: 907-474-7131; Fax: 907-474-5618; email: [eich@gi.alaska.edu](mailto:eich@gi.alaska.edu)

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## IAVCEI Report to IUGG for the Year 2001



Steve McNutt,  
Secretary General

IAVCEI ended the year strong and healthy, with 588 paid individual members, the second highest total yet. The IAVCEI web page was redesigned and is frequently updated. The web site URL is: <http://www.iavcei.org>

The volcano listserver administered by Arizona State University is now the official IAVCEI listserver. It has >2500 people listed, far exceeding the IAVCEI membership. Thus we hope to further boost the membership in IAVCEI. Three issues of the newsletter "IAVCEI News" were mailed to members in 2001.

A highlight of the last year was the highly successful conference "Cities on Volcanoes 2", HELD in Auckland, New Zealand. Approximately 250 volcanologists, planners, and industry and government officials attended the meeting from February 12-16, 2001. The five-day meeting brought together scientists and multidisciplinary experts from around the globe to discuss aspects of volcanic hazards and their effects on urban areas. The meeting was well organized by representatives from the Auckland Regional Council, the Australian Geological Survey Organization, the Institute of Geological and Nuclear Science, Massey University, and the University of Auckland. The meeting consisted of 151 abstracts presented in twelve theme sessions. A travel grant from IUGG helped pay expenses for 10 young scientists or scientists from developing countries.

The next IAVCEI General Assembly is tentatively scheduled for November-December 2004 in Chile. Over the next few years, IAVCEI will focus its efforts on several smaller meetings, including the IAVCEI 1902 Centennial Workshop (May 2002, Martinique). We expect a strong showing for volcanology at the July 2003 IUGG meeting in Sapporo, Japan, as well as excellent field trips. IAVCEI representatives met with the Scientific Program Committee in July and December 2001 to help produce the IUGG 2003 Volcanology Program.

The IAVCEI Executive Committee met in Auckland and conducted two meetings covering many aspects of IAVCEI business.

Officers of IAVCEI are:

President	Steve Sparks (UK)
Vice-President	Joerg Keller (Germany)
Vice-President	Tadahide Ui (Japan)
Secretary-General	Steve McNutt (USA)
Members of Executive Committee	Toshitsugu Fujii (Japan)
	Bruce Houghton (NZ)
	Jocelyn McPhie (Australia)
	Hugo Moreno (Chile)
	Raden Sukhar (Indonesia)

IAVCEI sold several educational products in 2001. Two videos on 1) understanding volcanic hazards and 2) reducing volcanic risk were produced professionally under contract with

IAVCEI. Over 70 videos were sold in 2001. Also, a volcano calendar was produced by IAVCEI members and was printed and marketed by a professional calendar company. Over 5,000 calendars were sold and an additional 800 were distributed by IAVCEI to various scientific, educational, and governmental organizations. IAVCEI received a small royalty payment from the calendars.

The year 2001 was an active and productive year for IAVCEI. Some of our goals for 2002 are to boost membership and to promote the activities of our commissions.

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Co-Conveners: Setsuya Nakada, Earthquake Research Institute, University of Tokyo, Japan  
Stephen Tait, Dept. of Earth Science & Engineering, Imperial College, UK

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### **V11: Integrated Monitoring of Active Volcanoes** IAVCEI

Active volcanoes have traditionally been monitored by seismic networks, deformation sensors, microphones, gas sampling, and electromagnetic methods, amongst others. These ground-based techniques are now augmented by space-based methods such as INSAR, GPS, and thermal and visible imagery from satellites. The opportunities are thus greatly improved to integrate knowledge and place detailed constraints on models of magma movement and eruption. In this session we will review the state-of-the-art of modern and fully integrated volcano monitoring. We seek case studies that show the value of integrated monitoring, with particular emphasis on new insights that are made possible by integration of multiple datasets.

Convener: Stephen R. McNutt, Alaska Volcano Observatory, UAF Geophysical Institute, P.O. Box 757320, Fairbanks, AK 99775-7320, USA; Phone: 907-474-7131; Fax: 907-474-5618; email: [steve@giseis.alaska.edu](mailto:steve@giseis.alaska.edu)

Co-Convener: Hiromu Okada, Hokkaido University, Japan

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### **V12: Detecting magma chambers** IAVCEI

In this session we will address the fundamental issues associated with plumbing systems in the crust and how magma is stored over time. We are especially concerned with where magma resides in the subsurface and how can we define magma storage systems with adequate resolution? We will address issues of delineation and detection of magma chambers from the surface to the slab where magma genesis takes place. A broad range of observations and methodologies should be used to address these issues, including (1) Seismology: travel time inversion, earthquake location and waveform analysis; (2) Petrology; (3) Geodynamics; (4) Gravity; (5) GPS and INSAR; (5) Electromagnetic Methods.

Convener: Jonathan M. Lees, Associate Professor, The University of North Carolina at Chapel Hill, Department of Geological Sciences, Campus Box #3315, Chapel Hill, NC 27599-3315, USA; Phone: (919) 962-0695; Fax: (919) 966-4519; email: jonathan\_lees@unc.edu

Co-Conveners: Valérie Cayol, OPGC - Université B. Pascal - CNRS, France, Eisuke Fujita, Natl. Res. Inst. for Earth Science and Disaster Prevention, Japan, Motoo Ukawa, Natl. Res. Inst. for Earth Science and Disaster Prevention, Japan

**V13: Assessing Volcanic Risk**

IAVCEI

The focus of this session is on volcanic risk assessment. Papers that emphasize the development of stochastic approaches to characterizing both the probability of a given type of volcanic event and its consequences will be emphasized. We also seek papers that describe applications of volcanic risk assessment to both short term (e.g., urban and aviation hazards) and long term (e.g., radioactive waste repositories).

Convener: Greg A. Valentine, Group Leader—Hydrology, Geochemistry, and Geology, Mail Stop D462, Los Alamos National Laboratory, Los Alamos, NM 87545, USA; Phone: (505) 665-0259; Fax: (505) 665-3285; email: gav@lanl.gov

Co-Conveners: Grant Heiken, Los Alamos National Laboratory, USA; Yoshiaki Ida, Earthquake Research Institute, University of Tokyo, Japan

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supporting letters. For the Wager Medal, where there is an age restriction, the package must include information to confirm the nominee's eligibility".

**Young Scientist Lecture**

IAVCEI plans to initiate a Young Scientist Lecture. The details and naming of the lecture have yet to be decided. The Lecture will be a way of recognising the accomplishments of young scientist at the beginning of their careers.

**Thorarinsson Medal Winners**

1984: R L Smith, 1988: G P L Walker, 1992: H U Schmincke, 1996: R V Fisher, 2000: K Aki

**Wager Medal Winners**

1974: F Barberi, J Varet, 1978: R S J Sparks, 1987: C Bacon, 1993: C Jaupart, C J N Wilson, 1998: J Davidson, G Macedonio, 2002: A W Woods, J Gardner



Lake Nyos degassing project. See article on page 8 for further information.

**Future Meetings**

Some Future IAVCEI/Volcanology Meetings:

1. IAVCEI 1902 Centennial Workshop, Mount Pelee, Martinique May 8, 2002; contact: [cheminee@ipgp.jussieu.fr](mailto:cheminee@ipgp.jussieu.fr)
2. 3rd Biennial Workshop on Subduction Processes in the Kurile-Kamchatka-Aleutian Arcs, Fairbanks, Alaska June 9-15, 2002, contact: [eich@gi.alaska.edu](mailto:eich@gi.alaska.edu)
3. Chapman Conference on Volcanism and the Earth's Atmosphere, Santorini, Greece - June 20-24, 2002. contact: [robock@envsci.rutgers.edu](mailto:robock@envsci.rutgers.edu)
4. IUGG General Assembly in Sapporo, Japan June 30-July 11, 2003; contact: [iugg2003@ics-inc.co.jp](mailto:iugg2003@ics-inc.co.jp)
5. State-of-the-Arc, Cascades, 2003 (tentative)
6. Cities on Volcanoes 3, Hawaii, 2003 (tentative)
7. International Geological Congress, Florence, Italy August 16-26, 2004 contact: [www.iugs.org](http://www.iugs.org)
8. IAVCEI 2004 General Assembly, Chile November/December 2004 (planning under way)
9. IAVCEI 2005 China, Continental Basalt Volcanism (tentative)

Further information may be found on the IAVCEI web site at [www.iavcei.org](http://www.iavcei.org)

**General Information**

## Ceremony of the United Nations Sasakawa Award for Disasters Reduction

The ceremony of the United Nations Sasakawa Award for Disasters Reduction was held on Wednesday 10 October 2001 at the Palais des Nations in Geneva, in conjunction with the International Day for Disasters Reduction. The United Nations Sasakawa Award is together with WHO Sasakawa Health prize and the UNEP Sasakawa Environment prize, one of the three prestigious prizes established in 1986 by Mr. Ryoichi Sasakawa, the founding chairman of the Nippon Foundation, in order to contribute to international initiatives of humanitarian nature aiming at improving social, cultural and economic well-being and combating poverty around the world. The United Nations Sasakawa Award for Disaster is awarded annually to individuals or institutions which have made outstanding contributions to the prevention of disasters and the reduction of vulnerability worldwide, consistent with the aims and objectives of the United Nations International Strategy for Disasters Reduction (UN-ISDR).

This year, the event was chaired by the director of the ISDR, Mr. Salvano Briceno. The laureate 2001 of the United Nations Sasakawa Award for Disasters Reduction was Mr. Goldammer of the Global Fire Monitoring Centre (GFMC) of Freiburg, Germany. Among the other laureates, two of them was related directly to the Volcanology. First was a Certificate of Distinction for the Philippines Institutes of Volcanology of the Philippines (Phivolcs) and the Second, with a Certificate of Merit for the Nyos-Monoun Degassing Programme (NMDP) advisory Committee from Cameroon represented by Mr Michel Halbwegs (France) and Mr Klaus Tietze (Germany) For background, the lake Nyos disaster, which claimed 1,800 victims in August 1986, was not unprecedented, but never before had there been an asphyxiation of so many human beings and all terrestrial animals on such a scale in a single and brief event. Two years previously indeed, a lethal gas burst originated from the neighbouring lake Monoun, in the same remote area of Cameroon, and killed 37 people, an odd and tragic episode that went almost unnoticed. Both lakes occupy the crater of a supposedly extinct volcano, in a region known by geologists for its numerous gaseous water springs, a common feature of old volcanic areas. In both cases, without prior notice, a cloud of dense gas erupted from the lake, covering the surroundings under a deadly blanket several tens of meters thick, for an unknown amount of time. The source of the gas became clear in the aftermath of the disasters, since the normally clear waters of the lakes turned reddish and the lake shores were severely disturbed by waves and strong winds. No one in the path of the cloud managed to escape its lethal upshot. Witnesses on topographic highs reported a loud noise originating from the lake and, in the case of lake Nyos, flashes of light visible over the lake; both disasters occurred at night, darkness adding to the mystery these natural catastrophes. Thorough investigations of the physics and chemistry of lakes Monoun and Nyos quickly revealed that both lakes still contain huge amounts of carbon dioxide (10 million m<sup>3</sup> and 300 million m<sup>3</sup> in Monoun and Nyos, respectively) and that this gas is being added at such a rate that saturation could be reached within years in the deep layers of the lakes. Since it is impossible to guarantee the perennial stability of the lakes, it has been proposed to make these lakes safer by extracting, in a controlled way, the carbon dioxide they contain. The process is no more than a limnic eruption brought under control; it is inspired by the industrial process known as "gas lift" and, more precisely, by the methane (and CO<sub>2</sub>) extracting unit which had been operating at Gisenyi, Ruanda, on the shore of the African lake Kivu (another gas-bearing lake, but far from saturation). At Monoun, and in 1995 at Nyos, M. Halbwegs and J. Grangeon (Université de Savoie, France) demonstrated the feasibility to extract gas of these lakes. In both cases, the eruption of a gas-water mixture was primed through a 140 mm diameter pipe (made of high-density polyethylene). The measured flow-rate matched the results of a numerical modelling of the diphasic flow, as carried out by G. Kayser, and the reliability of the remotely operated control valve for stopping the flow on request was also demonstrated.

After 6 years of delay, on 30 January 2001 the team has began the first degassing phase of the Lake Nyos. A spectacular 50 m high fountain (gas and water) soared above the surface of the lake. The demonstration was a total success: a powerful soda spray jet - stable and safe - was switched on and off several times using a remote radio-controlled system. The next stage for the team will be the installation of five additional pipes at Nyos, and similar pipes at Monoun. The overall program will further reduce the risks to human life by lowering the gas concentrations in the lakes through this controlled pumping.

\* A webcam was installed on the lake Nyos - So that we can monitor the degassing process - A new picture is automatically transmitted by Immarsat every 3 days. <http://perso.wanadoo.fr/mhalb/nyos>

\* The International Strategy for Disaster Reduction ISDR was therefore established, as of 1st January 2000 through UNGA resolution A/RES/54/219. Its major objectives are to enable all communities to become resilient to the effects of natural, technological and environmental hazards, by reducing the compound risks they pose to social and economic vulnerabilities within modern societies, and to proceed protection against hazards to the management of risk, through the integration of risk reduction into sustainable development.

Henry Gaudru, European Volcanological Society - Geneva - Switzerland - ISDR partner - Email : [HGaudruSVE@compuserve.com](mailto:HGaudruSVE@compuserve.com) - <http://www.sveurop.org>

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